

CLAIMS

1. A component mounting head (10) which includes a suction nozzle (3) having a suction-and-holding face (14) for a component (1, 91), and in which a component is sucked and held by the suction-and-holding face of the suction nozzle and the sucked-and-held component is placed at a component mounting position in a board (2) while the suction and holding of the component is released, by which the component is mounted onto the component mounting position, wherein

a portion of the suction nozzle having the suction-and-holding face is formed from a semiconductor ceramic.

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2. The component mounting head as defined in Claim 1, wherein the semiconductor ceramic has a volume resistivity value within a range of 10^4 to $10^8 \Omega \cdot \text{cm}$.

20 3. The component mounting head as defined in Claim 2, wherein

in the suction nozzle, a suction hole portion (81) which is integrally formed of a generally circular-shaped hole portion (81a) formed with an axial center of the suction nozzle taken as its center, and a plurality of

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end-portion extended portions (81b) that end portions of the circular-shaped hole portion are partly extended in its radial direction and which serves to suck up the component being in contact therewith is formed in the suction-and-holding face.

4. The component mounting head as defined in Claim 3, wherein the suction nozzle comprises:

a projecting member (28) which is inserted and placed within the generally circular-shaped hole portion so as to be slidable between an accommodated position, where a tip end portion (29) of the projecting nozzle is positioned inner than the suction-and-holding face, and a projective position, where the tip end portion is projected from the suction-and-holding face; and

a biasing member (21) for normally biasing the projecting member toward the projective position.

5. The component mounting head as defined in Claim 4, wherein the tip end portion of the projecting member is formed from the semiconductor ceramic.

6. The component mounting head as defined in Claim 3, wherein the suction-and-holding face of the suction nozzle is surface finished so as to have a multiplicity of

depressed/projected portions (52a, 52b) having heights or depths of about 10 to 20 μm .

7. The component mounting head as defined in Claim 6,
5 wherein the multiplicity of depressed/projected portions are recess portions (52a, 52b) which are formed in the suction-and-holding face so as to make the suction hole portion and an outer circumferential end portion of the suction-and-holding face communicated with each other.

10 8. The component mounting head as defined in Claim 1, further including an auxiliary suction member (22) which is formed from an elastic material and which has an inner circumferential end portion (72) placed in close contact
15 with an outer circumferential portion of the suction nozzle, and an outer circumferential end portion (71) formed so as to project outward of a circumferential portion of the suction-and-holding face and placed at a position generally equal in height to the suction-and-holding face or slightly
20 backward of the suction-and-holding face.

9. The component mounting head as defined in Claim 8, wherein the suction nozzle includes an auxiliary suction member fitting portion (44) which is set at an outer
25 circumferential portion thereof so that the inner

circumferential end portion of the auxiliary suction member is attached thereto detachably therefrom, and the auxiliary suction member is selectively attached to the auxiliary suction member fitting portion depending on size of the component to be sucked and held.

10. A suction nozzle (3) included in a component mounting head (10) for sucking and holding a component (1, 91) and placing the sucked-and-held component to a component mounting position in a board (2) and releasing the suction and holding of the component to mount the component onto the component mounting position, wherein a portion of the suction nozzle having a suction-and-holding face (14) for releasably sucking and holding the component is formed from a semiconductor ceramic.

11. A method for manufacturing a suction nozzle (3) included in a component mounting head (10) for sucking and holding a component (1, 91) and placing the sucked-and-held component to a component mounting position in a board (2) and releasing the suction and holding of the component to mount the component onto the component mounting position, the method comprising:

with use of a metal mold in which numerous hard particles are fixed at a portion corresponding to the

component suction-and-holding face (14) in the suction nozzle, molding the suction nozzle by injecting a semiconductor ceramic into the metal mold so that a multiplicity of depressed/projected portions (52a, 52b) corresponding to the individual hard particles are formed in the suction-and-holding face.

12. The method for manufacturing a suction nozzle as defined in Claim 11, wherein

the metal mold is formed by electrodepositing the hard particles containing diamond particles having diameters of about 10 to 20 μm at sites corresponding to the suction-and-holding face, and the depressed/projected portions formed in the suction-and-holding face have heights or depths of about 10 to 20 μm .